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Dr. Marcia P. Sward, Project Director
(Executive Director, MAA)

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The Mathematical Association of America (MAA)
1529 Eighteenth Street, N.W.
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13. ABSTRACT (Maximum 200 words)

Technical Objective:
The objective is to prepare a team of U.S. high school students to compete in the International Mathematical Olympiad held July 17-18 in Sigtuna, Sweden. Those selected will be introduced to a wide range of mathematical problems and theory at the Mathematical Olympiad Training Session, June 11 - July 10, 1991, at the U.S. Military Academy.

14. SUBJECT TERMS

15. NUMBER OF PAGES
1 with attach.

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The MATHEMATICAL ASSOCIATION of AMERICA

1529 Eighteenth Street, N.W. ■ Washington, D.C. 20036 ■ Telephone (202) 387-5200

March 20, 1992

Department of the Navy
Office of Naval Research
Resident Representative
National Academy of Sciences
2135 Wisconsin Avenue, N.W., Rm 102
Washington, DC 20007

YOUR REF: ONR GRANT N00014-91-J-1382

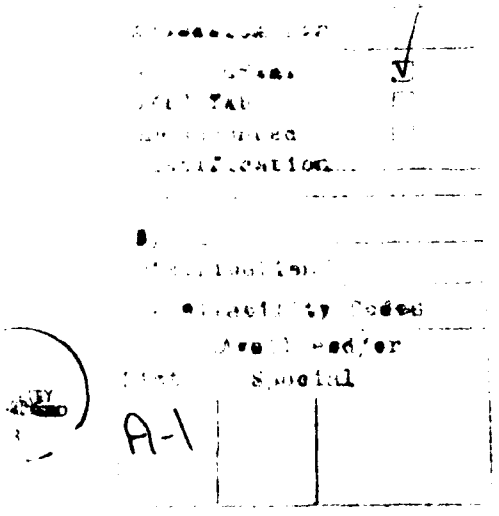
To: Ms. Adrienne Louden

From: Maureen Callanan

At the request of Dr. Marcia Sward, I am enclosing a copy of the performance report for *ONR Grant N00014-91-J-1382. This report concerns activities of the 1991 MOTS* (Mathematical Olympiad Training Session) held at the U.S. Military Academy from June 11 to July 10, 1991.

CC with encs.: DTIC (Original)
Dan Fasko/Ms. Louden
Neil Gerr (3 copies)

Rhoda D. Goldstein (MAA)



Fax (202) 265-2384 E-mail maa@athena.umd.edu

ONR Grant Number N00014-91-J-1382

Report on the
1991 Mathematical Olympiad Training Session

The 1991 Mathematical Olympiad Training Session (MOTS) was held at the U.S. Military Academy June 11 - July 10, 1991. Twenty-four students attended the MOTS, along with three instructors and two student assistants.

The MOTS instructors were:
Professor Cecil Rousseau, Director
Professor Gail D. L. Ratcliff, Associate Director
Professor Dan Ullman, Associate Director
The Student assistants were:
Mr. Royce Peng
Mr. Sam Vandervelde

A list of the student participants is attached to this report.

The curriculum of the MOTS included instruction in areas of mathematics that are traditionally emphasized in IMO competitions but are often not treated adequately in the U.S. high school curriculum. The students also received instruction in techniques of problem solving and extensive drill in solving problems from past IMO examinations.

At the MOTS, a team of six students was selected to represent the United States at the 32nd International Mathematical Olympiad, held on July 17-18 in Sigtuna, Sweden. The U.S. team placed fifth in competition with teams from 55 countries. Every member of the U.S. team won an individual medal.

A news release about the U.S. team is attached to this report.

Marcia P. Sward
Project Director

The MATHEMATICAL ASSOCIATION of AMERICA
1529 Eighteenth Street, N.W. ■ Washington, D.C. 20036 ■ Telephone (202) 387-5200

FOR IMMEDIATE RELEASE
Mailed: July 23, 1991

Contact:
Kathleen Holmay
301-588-6168

USA TEAM PLACES FIFTH IN INTERNATIONAL MATHEMATICAL OLYMPIAD

(Washington, DC) . . . . . A team of six American high school students placed fifth in the 32nd International Mathematical Olympiad (IMO), held from July 17-18 in Sigtuna, Sweden. Every member of the American team won an individual medal. The team scored 212 points out of a possible 252.

IMO judges awarded an individual gold medal to Joel Rosenberg, silver medals to Kiran Kedlaya, Robert Kleinberg, Lenhard Ng, and Michail Sunitsky, and a bronze medal to Ruvim Breydo, all U.S. team members.

The fifty-five Olympiad teams competed by working on solutions to six challenging mathematical problems in two, 4 1/2-hour sessions. The cutoff scores for gold, silver, and bronze medals were as follows: 34-42 for gold, 23-33 for silver, and 16-22 for bronze.

U.S. IMO team coach Cecil Rousseau, Memphis State University, said, "I was very proud of our team's performance. We have a young team this year with only two seniors and we knew that we would face strong teams from China, the new Germany, and such experienced

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competitors as the Soviet Union, Romania and Hungary."

The US team was chosen on the basis of performance in the Twentieth Annual United States of America Mathematical Olympiad (USAMO), held this year on April 23, and on an evaluation of their work at a rigorous 4-week training session, held from June 11 to July 11 at the U.S. Military Academy at West Point, NY.

The winners of the 1991 USAMO were honored on June 10 at the National Academy of Sciences and the US Department of State in Washington, DC.

The Mathematical Olympiad activities are sponsored by eight national associations in the mathematical sciences with arrangements made by the Mathematical Association of America. Financial support was provided by IBM, the Army Research Office, the Office of Naval Research, Hewlett-Packard, and the Matilda R. Wilson Fund.

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IMO team members:

Ruvim Y. Breydo, Stuyvesant High School, New York City
Kiran S. Kedlaya, Georgetown Day High School, Washington DC
Robert D. Kleinberg, Iroquois High School, Elma, NY
Lenhard L. Ng, Chapel Hill Senior High School, Chapel Hill, NC
Joel E. Rosenberg, Hall High School, West Hartford, CT
Michail G. Sunitsky, Stuyvesant High School, New York City

A sample problem from the 32nd International Mathematical Olympiad: Let $S = \{1,2,3,\ldots,280\}$. Find the smallest integer n such that each n - element subset of S contains five numbers which are pairwise relatively prime.

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Sponsors of the USA Mathematical Olympiad and the US International Mathematical Olympiad team are:

American Mathematical Association of Two-Year Colleges
American Mathematical Society
American Statistical Association
Casualty Actuarial Society
Mathematical Association of America
Mu Alpha Theta
National Council of Teachers of Mathematics
Society of Actuaries

Top ten countries and scores in the 32nd IMO:

USSR	241
China	231
Romania	225
Germany	222
USA	212
Hungary	209
Bulgaria	192
Iran	191
Vietnam	191
India	187

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AMERICAN MATHEMATICS COMPETITIONS

1991 MATHEMATICAL OLYMPIAD PROGRAM

U.S. MILITARY ACADEMY
WEST POINT, NEW YORK

JUNE 11 - JULY 10, 1991

LIST OF PARTICIPANTS

Jeremy Bem (607) 257-6148 or 4839	301 Wyckoff Ave.	Ithaca, NY 14850
Andrew Brecher (617) 862-5345	9 Skyview Rd	Lexington, MA 02173-1112
Ruby Breydo (718) 997-7442	63-61 99 Street, Apt. C10	Rego Park, NY 11374
Richard Chung (606) 271-0512	3751 Appien Way #96	Lexington, KY 40517
Wei-Hwa Huang (301) 309-0033	11813 Riding Loop Terrace	North Potomac, MD 20878
Joseph Handley (312) 493-6344	5422 S Dorchester	Chicago, IL 60615
Galan Huntington (503) 344-2924	1817 W 9th Place	Eugene, OR 97402
Adam Kalai (708) 251-6350	507 Greenleaf	Wilmette, IL 60091
Kiran Kedlaya (301) 946-5604	12912 Georgia Avenue	Silver Spring, MD 20906
Robert Kleinberg (716) 652-3947	P.O. Box 176	Wales Center, NY 14169
Sergey Lavin (401) 751-7906	144 Irving Ave, Apt B-3	Providence, RI 02906
Loren Looger (205) 772-3811	1104 Mahan Drive	Madison, AL 35758
William R. Mann (615) 647-8339	311 Irene Drive	Clarksville, TN 37043
Akira Negi (704) 552-8703	2927 Arundel Drive	Charlotte, NC 28209
Lenhard Ng (919) 942-3931	1107 Roosevelt Drive	Chapel Hill, NC 27514
Joel Rosenberg (203) 233-1503	86 Lyman Road	West Hartford, CT 06117
Daniel Schepler (513) 426-6877	3121 Maginn Drive	Beavercreek, OH 45385
Oliver Schneider (617) 828-7526	3 Sunnybrook Lane	Canton, MA 02021
Andrew Schultz (708) 866-7272	2733 Prairie Avenue, Apt #3	Evanston, IL 60201
Anoop Sinha (415)493-4917	4716 Hubbartt Dr.	Palo Alto, CA 94306
Michail Sumitsky (718) 672-6521	33-52 85 Street, Apt #304	Jackson Heights, NY 11372
Erik Vee (218) 485-8330	109 Knollwood, RR 2	Moose Lake, MN 55767
Jonathan Weinstein (617) 862-2751	26 Sherburne Road	Lexington, MA 02173
Thomas Weston (814) 234-8291	544 Longbarn Road	State College, PA 16803

STAFF

Prof. Cecil Rousseau Department of Mathematics State University Memphis, TN 38152 (901) 678-3130	Prof. Dan Ullman George Washington Univ. 2130 H Street, NW Washington, DC 20052 (202) 994-6343	Prof. Gail D.L. Ratcliff Department of Mathematics Univ. of Missouri at St Louis St. Louis, MO 63121 (314) 382-9125
Royce Peng 5315 Vly View Road Rancho Palos Verdes, CA 90274 (213) 377-6652	Sam Vandervelde 206 North Main Street Amherst, VA 24521 (804) 946-2603	American Math Competitions (402) 472-2257 Math Association of America (202) 387-5200

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